"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Cytochemical and autoradiographic study of seasonal changes in the ovicells of amphibians. TSitologiia 2 no.1:37-44 Ja-F '60. (MIRA 13:5)

1. Kafedra obshchey biologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i Laboratorii tsitologii Leningradskogo universiteta.

(AMPHIBIA) (OVUM)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V. (Leningrad)

Electron microscopy of the cell nucleus and chromosomes. Fiziol. zhur. 46 no. 4:44-61 Ap '60. (MIRA 13:10)
(CHROMOSOMES) (CELL NUCLEI) (ELECTRON MICROSCOPY)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V. (Leningrad, L-52, ul. Yegorova 8, kv.45)

Role of nucleic acids in the synthesis of cell proteins. Arkh. anat. gist. i embr. 40 no.5:3-17 Mr '61. (MIRA 15:4)

1. Kafedra anatomii i gistologii (zav. - chlen-korrespondent AMN SSSR prof. P.V.Makarov) Leningradskogo universiteta.
(NUCLEIC ACIDS) (PROTEINS) (PROTOPLASM)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V. (Leningrad, K-112, Novocherkasskiy pr., 40, kv.4)

Some properties of osmium tetroxide as a fixator of cellular structures. Arkh. anat., gist. i embr. 42 no.6:111-119 Je '62. (MIRA 15:6)

1. Kafedra anatomii i gistologii (zav. - chlen-korrespondent AMN SSSR prof. P.V. Makarov) Leningradskogo universiteta.
(OSMIUM OXIDES)
(STRAINS AND STRAINING (MICROSCOPY))

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Relation between the number of chromosomes and the volume of pronuclei in the zygotes of a horse ascarid. Dokl. AN SSSR 154 no.6:1434-1437 F '64. (MIRA 17:2)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom Ye.N.Pavlovskim.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

KOCHETKIN, Ye.M., veterinarnyy vrach; [illegible], veterinarnyy vrach;
[illegible], veterinarnyy vrach; [illegible]

Erysipelatous septicemia of turkeys. Veterinariia 40 [illegible]
Ag '63.

1. Voronezhskaya veterinarnaya [illegible] (for Babkina, [illegible]). 2. Glavnyy veterinarnyy vrach "II pyatiletka" Voronezhskoy oblasti (for Makarov).

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, Petr Vasil'yevich, prof.; VASIL'YEV, Yu.A., red.

[Chemistry of the cell] Khimiia kletki. Leningrad, Ob-vo po rasprostraneniiu politicheskikh i nauchnykh znanii RSFSR, 1963. 56 p. (MIRA 17:5)

1. Chlen-korrespondent AMN SSSR (for Makarov).

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

SEMENOV, Severin Pavlovich; URAZOV, Ivan Grigor'yevich; ENTIN, Tamara Il'inichna; MAKAROV, P.V., prof., otv. red.; PETROVICHEVA, O.L., red.

[Manual for practical work in general histology with elements of microscopic anatomy] Posobie k prakticheskim zaniatiiam po obshchei gistologii s elementami mikroskopicheskoi anatomii. Leningrad, Izd-vo Leningr. univ., 1964. 67 p. (MIRA 17:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Autoradiographic study of ovulating, layed and dividing eggs of a frog. Dokl. AN SSSR 155 no.6:1432-1434 Ap '64. (MIRA 17:4)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom Ye.N.Pavlovskim.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Cytochemical study of the silk glands in Chinese tussah moth.
TSitologiia 7 no.5:616-621 S-O '65. (MIRA 18:12)

1. Kafedra tsitologii i gistologii Leningradskogo universiteta.
Submitted March 1, 1965.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Nature of protoplasm changes responsible for the occurrence of cellular paralysis. Vest. LGU 20 no.9:80-94 '65.
(MIRA 18:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V.

Autoradiographic study of protein-producing cells. Arkh. anat. gist. i embr. 48 no.4:3-16 Ap '65. (MIRA 18:6)

1. Kafedra anatomii i gistologii (zav. - chlen-korrespondent AMN SSSR prof. P.V. Makarov) Leningradskogo gosudarstvennogo ordena Lenina universiteta.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

SEMENOV, Severin Pavlovich; MAKAROV, P.V., prof., otv. red.; MATVEYEVA, T.V., red.

[Morphology of the vegetative nervous system and interoceptors] Morfologiia vegetativnoi nervnoi sistemy i interoretseptorov. Leningrad, Izd-vo Leningr. univ., 1965. 157 p. (MIRA 18:9)

1. Chlen-korrespondent AMN SSSR (for Makarov).

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, P.V. (Leningrad, K-11?. Nov cherkasskiy prospekt 40, kv.4)

Study of the nuclear [illegible] of frog [illegible]. Arkh. anat. gist. i embr. 45 no.[illegible] [illegible]. (MIRA 17:8)

1. Kafedra anatomii i [illegible] (zav. - [illegible]) AMN SSSR prof. P.V. [illegible] Leningradskogo gosudarstvennogo universiteta.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

GRAMENITSKIY, Yevgeniy Mikhaylovich; MAKAROV, P.V., red.; ONOSHKO, N.G., tekhn. red.

[Vital staining of cells and tissues under normal conditions and in pathology] Prizhiznennaia okraska kletok i tkanei v norme i patologii. Leningrad, Medgiz, 1963. 149 p. (MIRA 16:10)

(STAINS AND STAINING (MICROSCOPY))

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, R. A.

MAKAROV, R. A.—"The Method of Experimental Investigation of Dynamic Processes in the Basic Parts of Excavators." Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Science).

SO Knizhnaya letopis'
No 2, 1956

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV R.A.

GOMOZOV, I.M., kand.tekhn.nauk; MAKAROV, R.A., kand.tekhn.nauk

Investigating the pressure distribution in supporting jacks of the EGL-15 excavator. Stroi.i dor.mashinostr.2 no.9:7-10 S '57 (MIRA 10:11)
(Hydraulic jacks) (Excavating machinery)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, R.A., kand.tekhn.nauk

Experimental determination of frequency characteristics of tensometers used in investigating excavators. Sbor.trud.MISI no.26:146-149 '58. (MIRA 12:1)
(Strain gauges) (Electronic measurements)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

S/081/61/000/022/047/057
B101/B147

AUTHORS: Basin, Ya. N., Makarov, R. A.

TITLE: Device for measuring the weight by volume of concrete products

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1961, 312, abstract 22K324 (Sb. "Radioaktivn. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 2, M., Gostoptekhizdat, 1961, 41 - 42)

TEXT: The construction of the ИОВ-2(IOV-2) apparatus is described. This apparatus is used for determining the weight by volume of structural elements consisting of homogeneous material both during their production and assembly and after completed construction. The apparatus operates on the principle of measuring scattered gamma radiation of a weakly active source (up to 10 mg-equ Co^{60}). [Abstracter's note: Complete translation]

Card 1/1

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, Rostislav Alekseyevich, kand. tekhn. nauk; SHTIPEL'MAN, Il'ya Moiseyevich, inzh.; BAGAYEV, Yuriy Petrovich, st. inzh.; PERFILOV, I.F., inzh., red.

[Electrotensiometer devices in construction] Elektrotenzometricheskie pribory v stroitel'stva. Moskva, Gosstroizdat, 1962. 42 p. (MIRA 16:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' laboratorii novykh fizicheskikh metodov issledovaniya Nauchno-issledovatel'skogo instituta stroitel'noy fiziki Akademii stroitel'stva i arkhitektury SSSR (for Makarov). 3. Nachal'nik otdela eksperimental'noy avtomatiki i sredstv izmereniy TSentral'nogo eksperimental'nogo konstruktorskogo byuro "Stroymekhavtomatika" Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Shtipel'man). 4. Otdel eksperimental'noy avtomatiki i sredstv izmereniy TSentral'nogo eksperimental'nogo konstruktorskogo byuro "Stroymekhavtomatika" Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Bagayev).

(Tensiometers)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

BASIN, Ya.N.; MAKAROV, R.A.; SELEZNEV, N.V.

Selecting optimum parameters of radioisotope devices used in thermophysical irvestigations. Inzh.-fiz. zhur. 8 no.2:257-262 F '65. (MIRA 18:5)

1. Institut stroitel'noy fiziki, Moskva.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

FIGURNOV, K.M., professor, redaktor; MANDEL'SHTAM, A.B., professor, zaslushennyy deyatel' nauk, redaktor; BOGOROV, I.I., professor, redaktor; PETROV-MASLAKOV, M.A., professor, redaktor; MAKAROV, [illegible] dotsent, redaktor; TUMANOVA, Ye.S., dotsent, redaktor; RUDAKOV, A.V., redaktor; KHARASH, G.A., tekhnicheskiy redaktor

[Problems in the neurohumoral regulation of physiological and pathological processes of the sexual functions in women] Voprosy neiro-gumoral'noi reguliatsii fiziologicheskikh i patologicheskikh protsessov zhenskoi polovoi sfery. [Leningrad] Gos. izd-vo med. lit-ry, Leningradskoe otd-nie, 1956. 146 p. (MLRA 10:3)

1. Chlen-korrespondent AMN SSSR (for Figurnov)
(NERVOUS SYSTEM) (GENITOURINARY ORGANS--DISEASES)
(HORMONES, SEX)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, Roman Romanovich

[Extra-uterine pregnancy] Vnematochnaia beremennost'. Leningrad, Medgiz, 1958. 127 p. (MIRA 12:5)
(PREGNANCY, EXTRA-UTERINE)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

ALIPOV, Viktor Ivanovich; MAKAROV, R.R., red.; LEBEDEVA, Z.V., tekhn. red.

[Abortion, its harm and contraceptive agents]Abort, ego vred i protivozachatochnye sredstva. Leningrad, Medgiz, 1962. 39 p. (MIRA 15:9)

(ABORTION) (CONCEPTION—PREVENTION)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, Roman Romanovich, FIGURNOV, Konstantin Mikhaylovich [deceased]; GABELOV, A.A., red.

[Clinical lectures on selected obstetric topics] Klinicheskie lektsii po izbrannym glavam akusherstva. Leningrad, Meditsina. No.2. 1965. 294 p. (MIRA 18:8)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, Roman Romanovich; FIGURNOV, Konstantin Mikhaylovich [deceased]; ALIPOV, V.I., red.; KHARASH, G.A., tekhn.red.

[Clinical lectures on selected obstetric topics] Klinicheskie lektsii po izbrannym glavam akusherstva. Leningrad, Medgiz. No.1. 1963. 334 p. (MIRA 17:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S.

Four shift work conditions in a shielded stope. Mast.ugl. 4 no.12: 27 D '55. (MLRA 9:3)

1. Brigadir shchitovikov shakhty imeni Voroshilova kombinata Kuzbassugol'.
(Kusnetsk Basin--Coal mines and mining)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S.; KOVERDA, P.; KORCHAGIN, I.

Men with an inquisitive mind. Mast.ugl. 8 no.12:11-12 D '59.
(MIRA 13:4)

1. Znatnyy izobretatel' Karagandinskogo basseyna (for Makarov).
(Coal mines and mining--Technological innovations)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S., instruktor po podvodnomu plavaniyu

How to teach underwater swimming. Voen. znan. 39 no.5:30-31 My '63. (MIRA 16:5)

(Swimming)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S., trener moskovskoy sbornoy komandy po podvodnomu plavaniyu

Teaching diving in unit no.1. Voen. znan. 39 no.6:31-32 Je '63. (MIRA 16:8)

(Diving)

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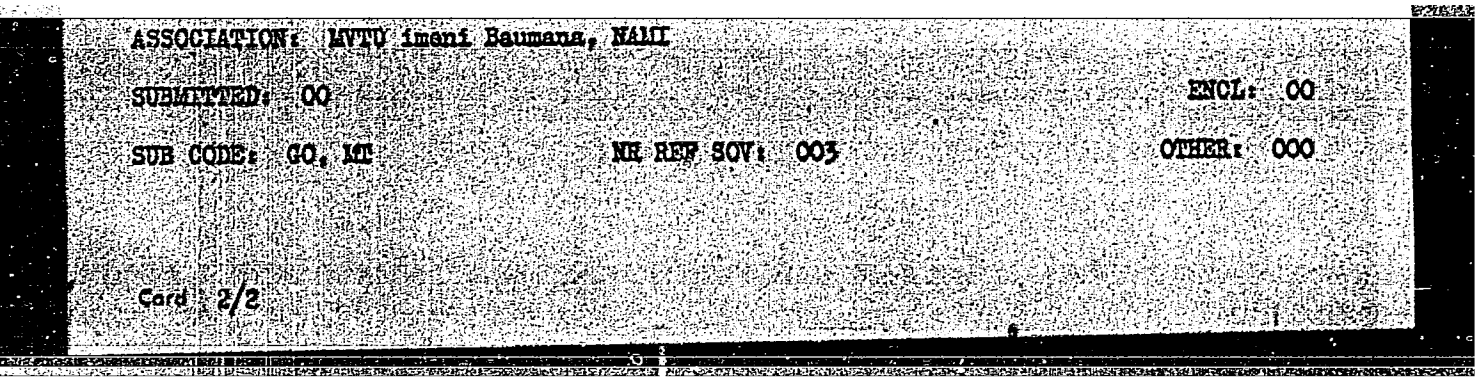

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BOCHAROV, N.F., kand. tekhn. nauk, dotsent; GUSEV, V.I., inzh.;
KRADINOV, Ye.B., kand. tekhn. nauk; MAKAROV, S.G., inzh.

Tensometering device for measuring the deformations of a balloon tire. Izv. vys. ucheb. zav.; mashinostr. no.2:119-123 '64. (MIRA 17:5)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.

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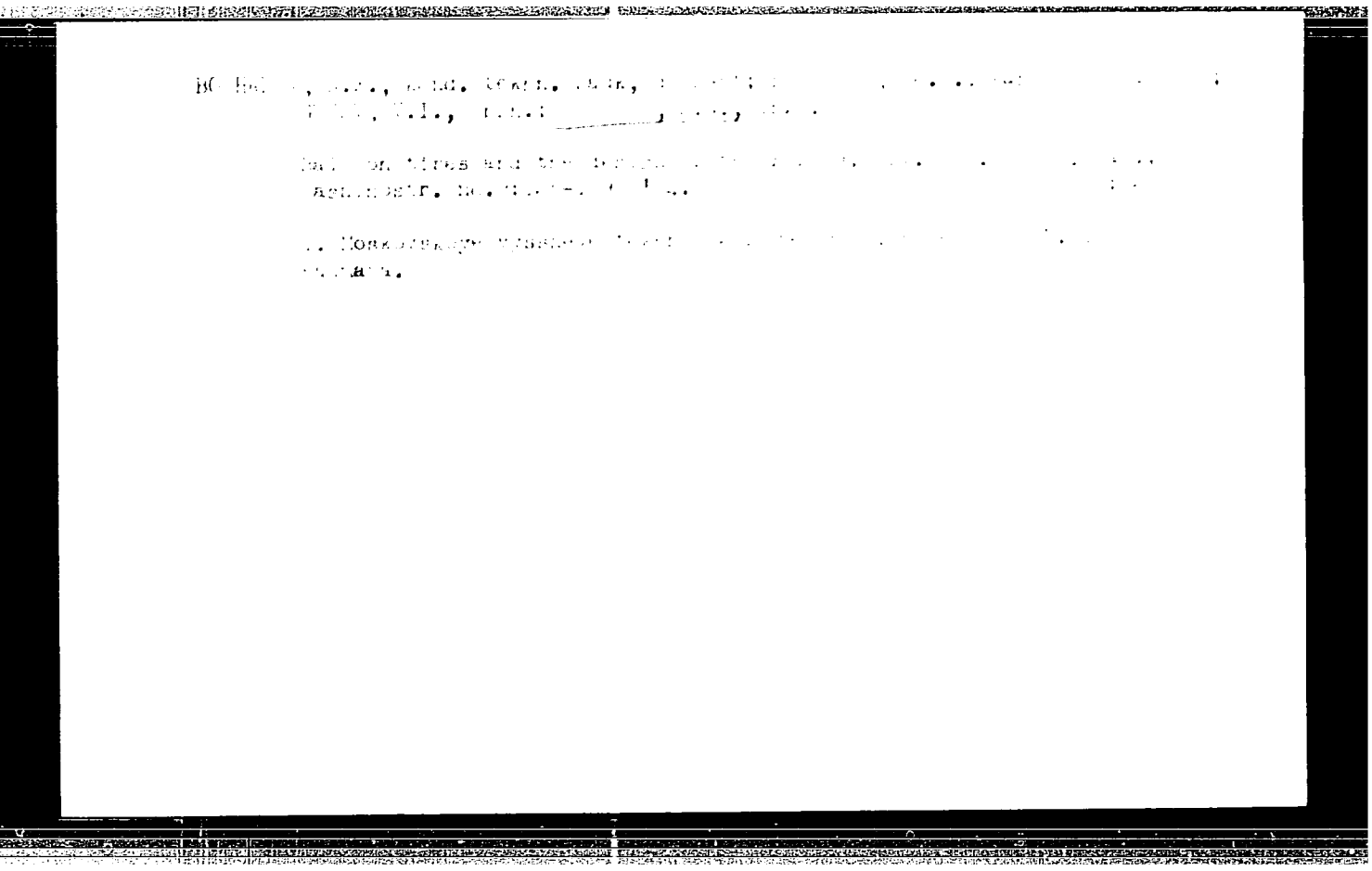

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

BOCHAROV, N.F., kand. tekhn. nauk; G[illegible], V.I.; K[illegible], Ye.B., kand. tekhn. nauk; [illegible], S.G.; [illegible], V.M., kand. tekhn. nauk

Torque distribution in the transmission of motor vehicles having several driving wheels with wide-low tires. Avt. prom. 31 no.2: 14-17 F '65. (MIRA 18:3)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana i TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S.I.; KUZ'MIN, I.G.

Automatic coke sampler. Sbor.rats.predl.vnedr.v proizv. no.5:43-44 '60. (MIRA 14:8)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Coke--Testing)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

GONCHARENKO, Mikhail Nikolayevich; MAKAROV, S.I., spets. red.;
GRIGOR'YEVA, A.I., red.; [illegible], M.Z., tekhn. red.

[Automatic control in military science] Kibernetika v voennom dele. Moskva, DOSAAF, 1963. 343 p. (MIRA 16:10)
(United States--Fire control (Gunnery))
(United States--Guided missiles)
(United States--Electronics in military engineering)

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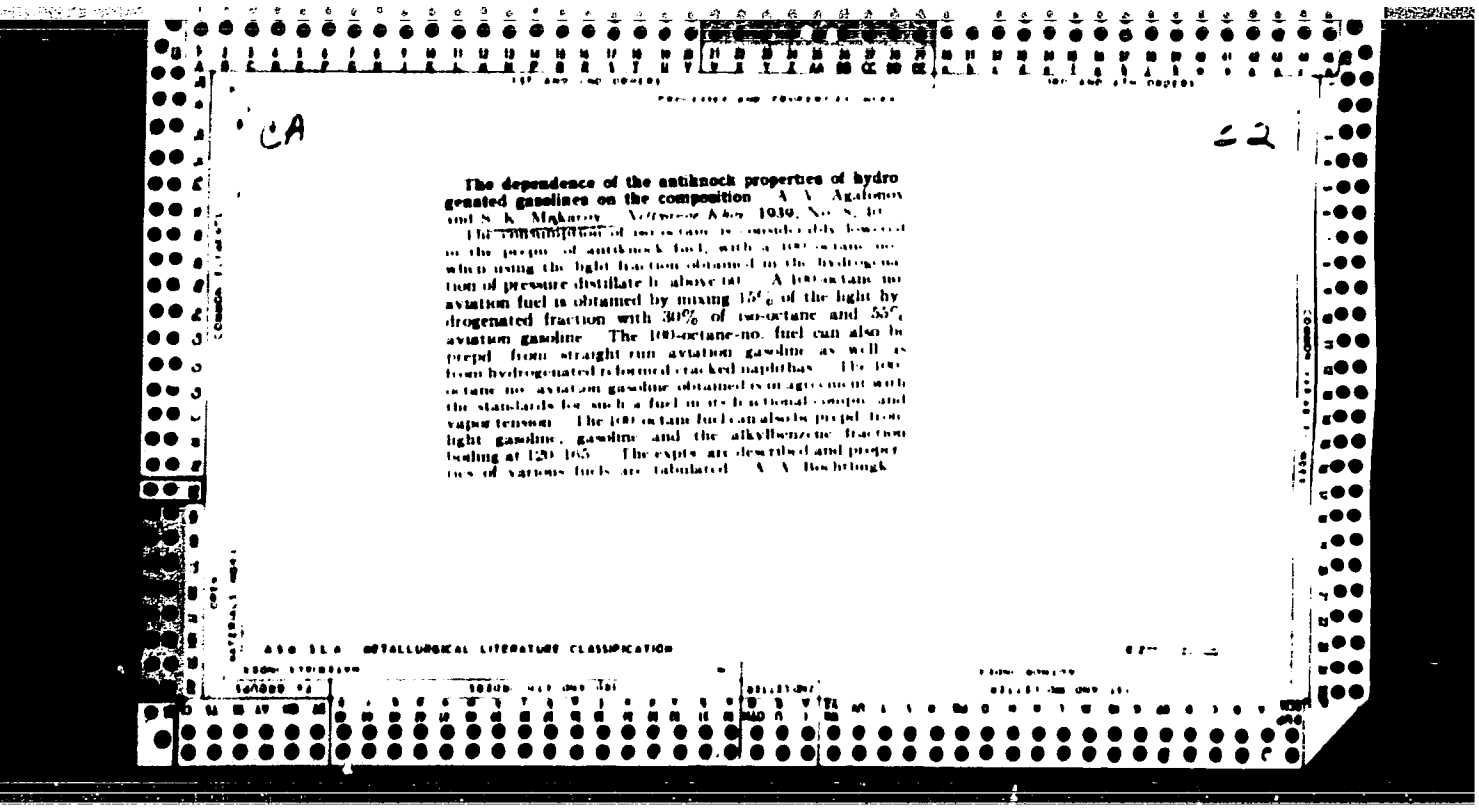

CA

22

The dependence of the antiknock properties of hydrogenated gasolines on the composition A. V. Agafonov and S. K. Mgkarov. Neftyanoe Khoz. 1939, No. 8, 40-

The manufacture of 100-octane is considerably lowered in the project of antiknock fuel, with a 100-octane number using the light fraction obtained in the hydrogenation of pressure distillate is above 60. A 100-octane no. aviation fuel is obtained by mixing 15% of the light hydrogenated fraction with 30% of iso-octane and 55% aviation gasoline. The 100-octane-no. fuel can also be prepd. from straight run aviation gasoline as well as from hydrogenated reformed cracked naphthas. The 100-octane no. aviation gasoline obtained is in agreement with the standards for such a fuel in its fractional compn. and vapor tension. The 100-octane fuels can also be prepd. from light gasoline, gasoline and the alkylbenzene fraction boiling at 120-165°. The expts. are described and properties of various fuels are tabulated. A. V. Bochringk.

A50 SLA METALLURGICAL LITERATURE CLASSIFICATION

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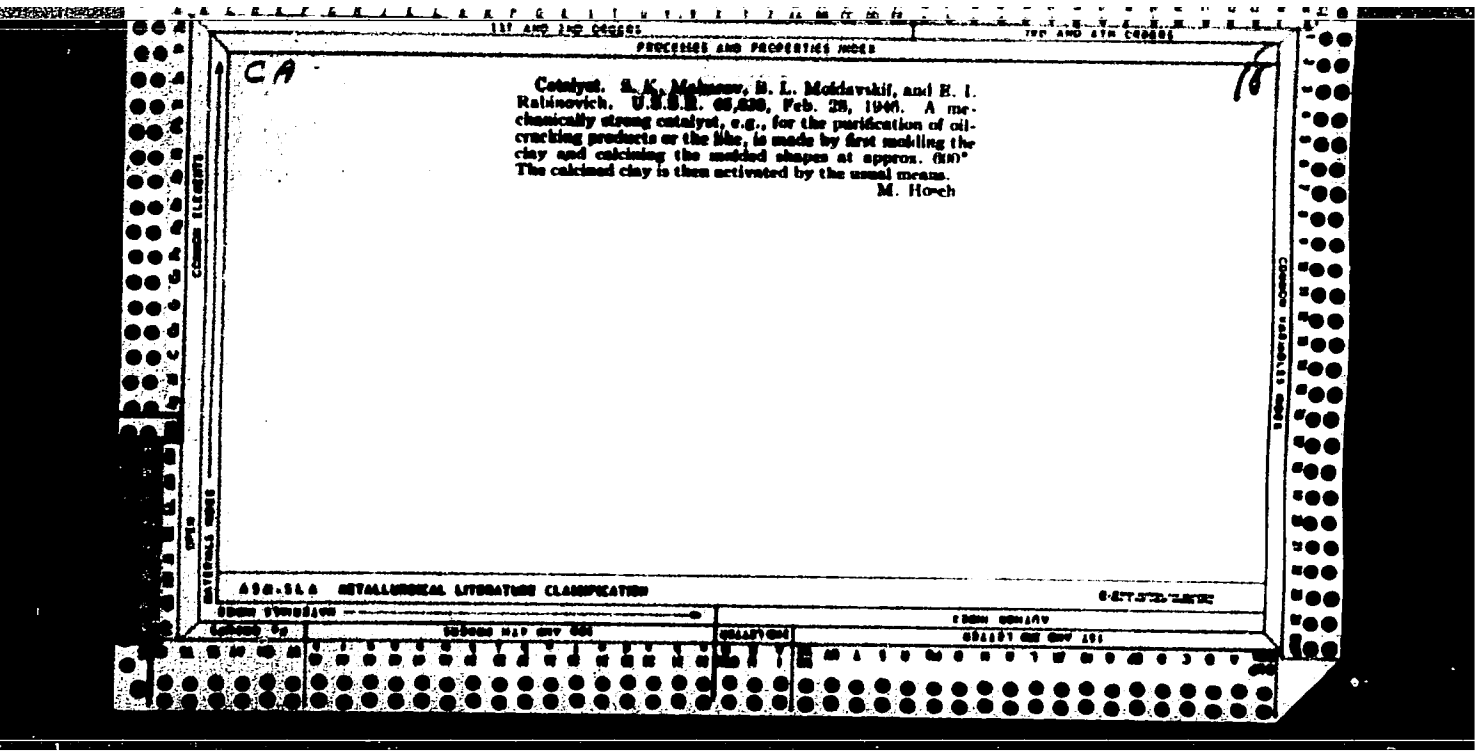

CA

Catalyst. S. K. Mekhanov, B. L. Moldavskiĭ, and E. I. Ratinovich. U.S.S.R. 65,630, Feb. 28, 1946. A mechanically strong catalyst, e.g., for the purification of oil-cracking products or the like, is made by first molding the clay and calcining the molded shapes at approx. 600°. The calcined clay is then activated by the usual means.

M. Hoch

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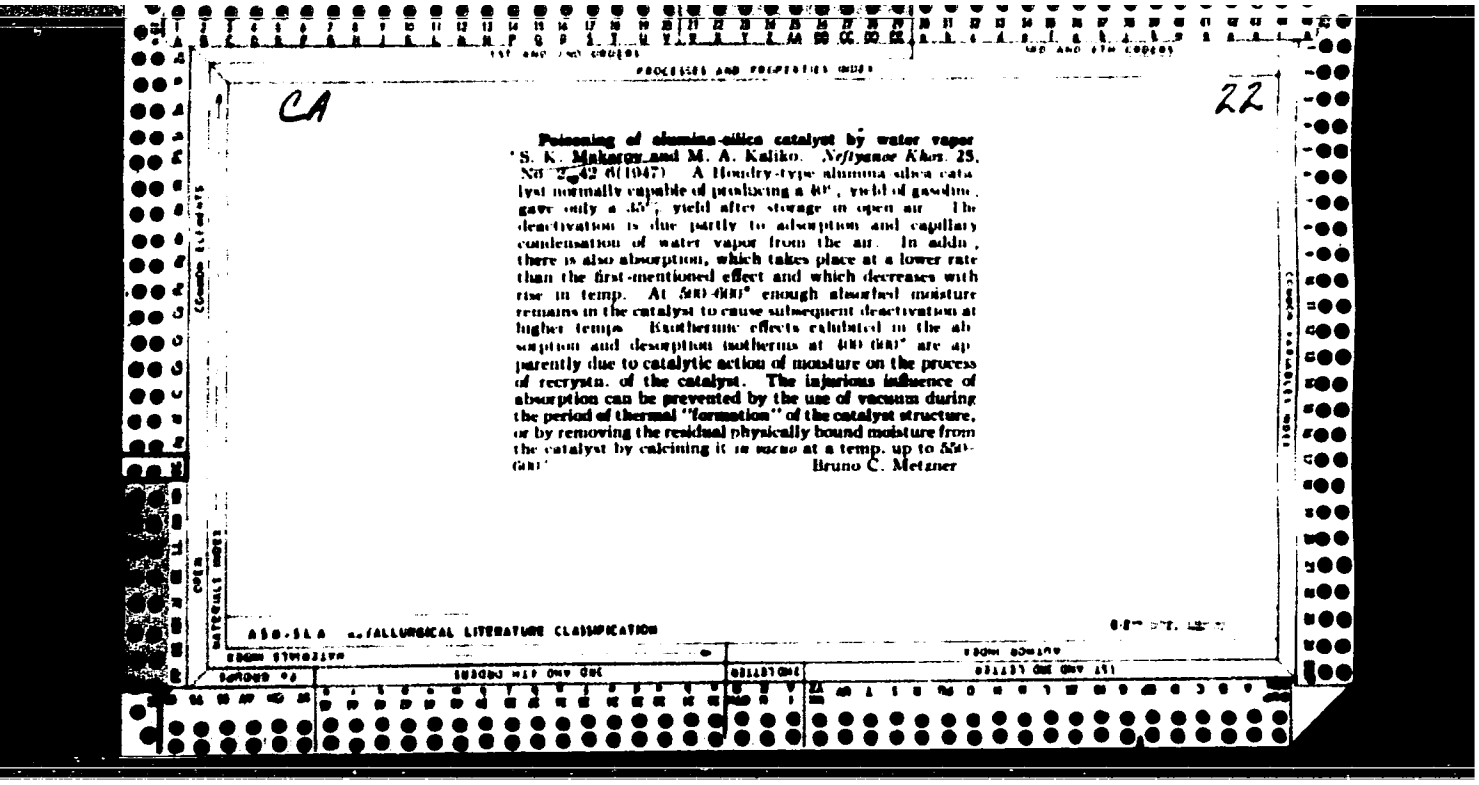

CA

22

Poisoning of alumina-silica catalyst by water vapor. S. K. Makarov and M. A. Kaliko. *Neftyanoe Khoz.* 25, No. 2, 42-6 (1947). A Houdry-type alumina silica catalyst normally capable of producing a 60% yield of gasoline gave only a 45% yield after storage in open air. The deactivation is due partly to adsorption and capillary condensation of water vapor from the air. In addn., there is also absorption, which takes place at a lower rate than the first-mentioned effect and which decreases with rise in temp. At 500-600° enough absorbed moisture remains in the catalyst to cause subsequent deactivation at higher temps. Exothermic effects exhibited in the absorption and desorption isotherms at 400-600° are apparently due to catalytic action of moisture on the process of recrystn. of the catalyst. The injurious influence of absorption can be prevented by the use of vacuum during the period of thermal "formation" of the catalyst structure, or by removing the residual physically bound moisture from the catalyst by calcining it *in vacuo* at a temp. up to 550-600°.
Bruno C. Metzner

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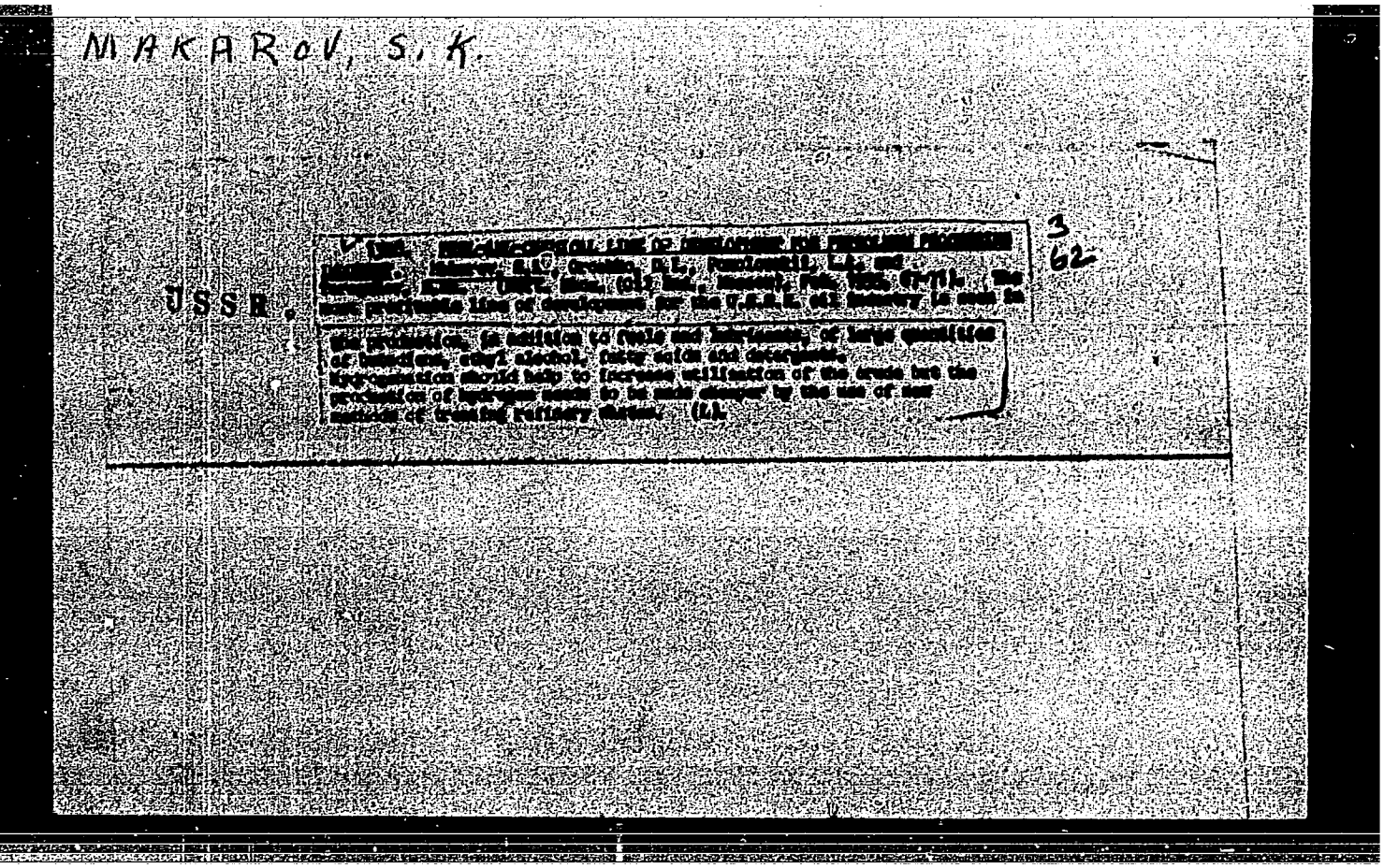

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MAKAROV, S.V.

Evaluation of the complexity of a splitting algorithm.
Kibernetika no. 4:31-37 Jl-Ag '65. (MIRA 18:12)

1. Submitted Jan. 18, 1965.

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40512

S/044/62/000/008/009/073
C111/C333

AUTHOR: Makarov, S. M.

TITLE: Minor systems of differential equations and their application in the determination of the invariants of the characteristic equation

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 36, abstract 8B161. ("Tr. Kuybyshevsk. aviats. in-t", 1961, no. 12, 371-383)

TEXT: Let $X = (x_{ij})$ be the matrix of the fundamental system of the solutions $x_j = (x_{1j},\ldots,x_{nj})$ of the vector equation

$$\frac{d}{dt}X = P(t)X \qquad (1)$$

where the matrix $P(t) \equiv (P_{ij}(t))$ satisfies the usual conditions for the existence and uniqueness of the solution for all $t \geq t_o$. The elements of the matrix $X^m = (x_{ij}^{(m)})$ are the various minors of m-th order

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$x_{ij}^{(m)}$ which are compiled from the elements of the determinant $|X|$ of matrix X. It is proven that the matrix X^m of the matrix equation (which the author designates as a minor equation) satisfies

$$\frac{d}{dt} X^m = P^m(t) X^m \text{ for all } 1 \leqq m \leqq n \qquad (2)$$

where the elements of the matrix $P^m(t) = (p_{kl}^{(m)}(t))$ $(k, l = 1,\ldots,N;$ $N = C_n^m$ -- the number of combinations of m elements from n) depend linearly on the elements $p_{ij}(t)$ of P(t). Since (2) is a Caley-Hamilton equation relative to the equation

$$\frac{d}{dt} X = P^m(t) X \qquad (3)$$

X^m is, therefore, the matrix of the fundamental system of the solutions

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Minor systems of differential . . .

$x_1^{(m)} = (x_{k1}^{(m)}, \ldots, x_{N1}^{(m)})$ of (3).

The equation (1) and (3) are identical for m = 1, for m = n (3) is a scalar equation $d|X|/dt = |X| \operatorname{tr} P$, where $\operatorname{tr} P = \sum_{i=1}^{n} p_{ii}$ is the trace of P. If all $p_{ij}(t)$ are limited in one interval, then so are all $p_{kl}^{(m)}(t)$; if all $p_{ij}(t)$ are periodic, then the scalar system of equations (2) is regular and reducible. The expressions of the elements $p_{kl}^{(m)}$ by the p_{ij} are given for all m = 2,3,...,n-1 and n = 1,...,6; the corresponding matrices are found in an appendix. As application of the properties of (2), mention is made of the A. M. Lyapunov method for calculating the invariants of the characteristic equation of system (1) with periodic P(t).

[Abstracter's note: Complete translation.]

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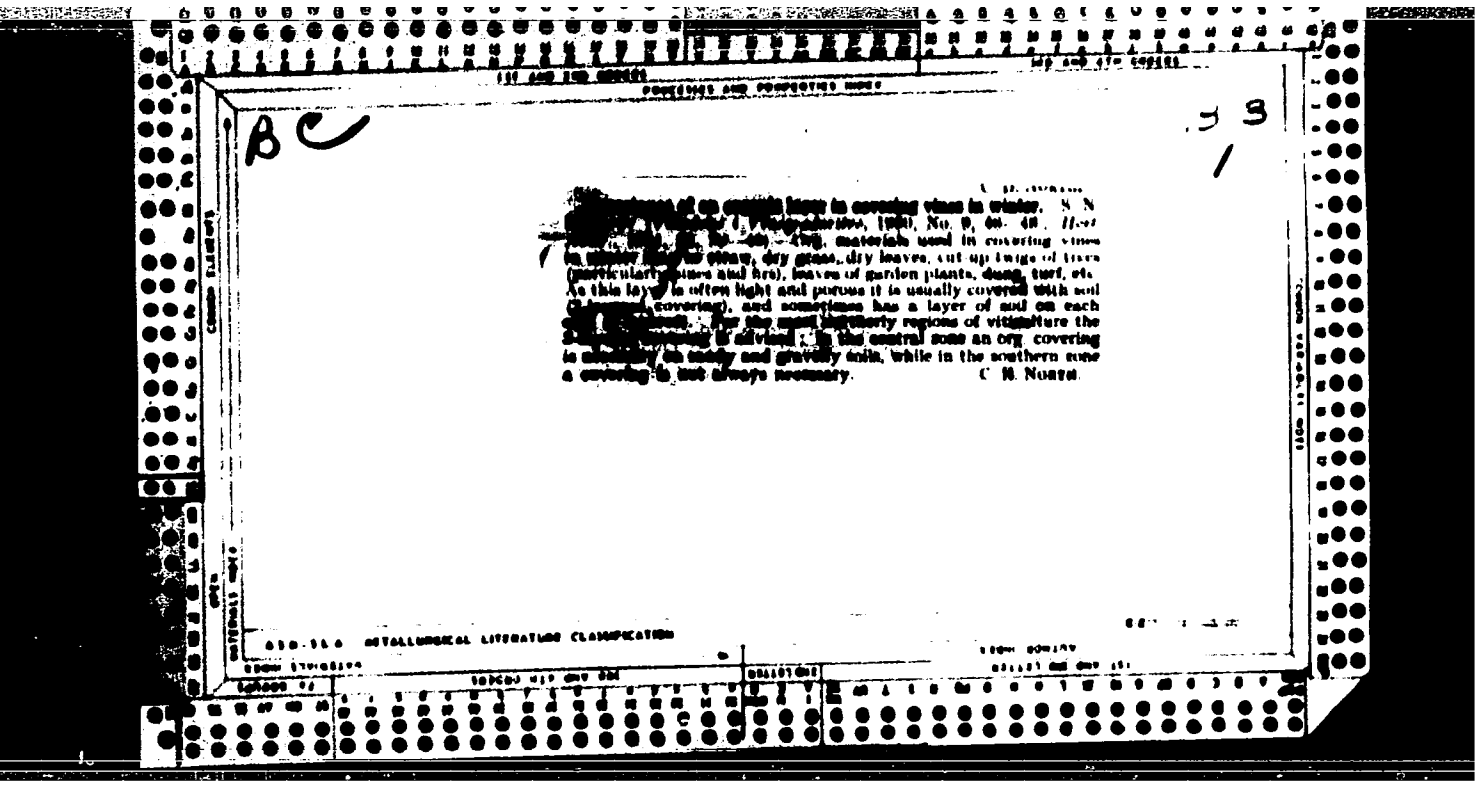

C. W. Noard.

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1. MAKAROV, S. N.

2. SSSR (600)

4. Oak

7. Biological forms of English "summor" oak in the Ostankinskaya Forest. Biul. Glav. bot. sadn No. 13, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

NAZAREVSKIY, S.I.; MAKAROV, S.N.; PILIPENKO, F.S.; GERASIMOV, M.V.; IL'INSKAYA, M.L.; VEKSLER, A.I., [deceased]; VASIL'YEV, I.M.; IL'INA, N.V.; SOKOLOV, S.Ya.; LOZINA-LOZINSKAYA, A.S.; SAAKOV, S.G.; ZALESSKIY, D.M.; AVRORIN, N.A.; IVANOV, M.I.; PRIKLADOV, N.V.; SOBOLEVSKAYA, K.A.; SALAMATOV, M.N.; MALINOVSKIY, P.I.; LUCHNIK, A.I.; KRAVCHENKO, O.A.; VEKHOV, N.K.; GROZDOV, B.V.; MASHKIN, S.; BOSSE, G.G.; PALIN, P.S., (g. Shuya, Ivanovskoy oblasti); MATUKHIN; ZATVARNITSKIY, G.F.; GRACHEV, N.G.; CHERKASOV, M.I.; KIRKOPULO, Ye.N.; LEVITSKAYA, A.M.; GRISHKO, N.N.; LIKHVAR', D.F. VIL'CHINSKIY, N.M.; LYPA, A.L.; OREKHOV, M.V.; SHCHERBINA, A.A.; TSYGANKOVA, V.Z.; BARANOVSKIY, A.L.; GEORGIYEVSKIY, S.D.; STEPUNIN, G.A. OZOLIN, E.P.; LUKAYTENE, M.K.; KOS, Yu.I.; VAIL'YEV, A.V.; RUKHADZE, P.Ye.; VASHADZE, V.N.; SHANIDZE, V.M.; MANDZHAVIDZE, D.V.; KORNESHKO, A.L.; KOLESNIKOV, A.I., (g. Sochi); SERGEYEV, L.I.; VOLOSHIN, M.P.; RYBIN, V.A.; IVANOVA, B.I.; RYABOVA, T.I.; GAREYEV, E.Z.; RUSANOV, F.N.; BOCHANTSEVA, Z.P.; BLINOVSKIY, K.V.; KLYSHEV, L.K.; MUSHEGYAN, A.M.; LEONOV, L.M.

Talks given by participants in the meeting. Biul.Glav.bot.sada no.15: 85-182 '53. (MLRA 9:1)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR (for Makarov, Pilipenko, Gerasimov, Il'inskaya, Veksler); 2. Akademiya komunal'nogo khozyaystva imeni K.D. Pamfilova for Vasil'yev); 3. Vsesoyuznaya sel'skokhozyaystvennaya vystavka (for Il'ina); 4. Botanicheskiy sad Botanicheskogo instituta imeni V.L.Komarova Akademii nauk SSSR (for Sokolov, Lozina-Lozinskaya, Saakov); 5. Botanicheskiy sad Leningradskogo

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NAZAREVSKIY, S.L.---(continued) Card 2.

gosudarstvennogo ordena Lenina universiteta (for Zalesskiy); 6. Polyarno-Al'piyskiy botanicheskiy sad Kol'skogo filiala imeni S.M. Kirova Akademii nauk SSSR (for Avrorin); 7. Botanicheskiy sak pri Tomskom gosudarstvennom universiteta (for Ivanov); 8. Botanicheskiy sad pri Tomskom gosudarstvennom universiteta imeni V.V. Kuybysheva (for Priklados); 9. TSentral'nyy Sibirskiy botanicheskiy sad Zapadno-Sibirskogo filiala Akademii nauk SSSR (for Salamatov, Sobolevskaya); 10. Botanicheskiy sad Irkutsko gosudarstvennogo universiteta imeni A.A. Zhdanova (for Malinovskiy); 11. Altayskaya plodovo-yagodnaya opytnaya stantsiya (for Luchnik); 12. Bashkirskiy botanicheskiy sad (for Kravchenko); 13. Lesostepnaya selektsionnaya opytnaya stantsiya dekorativnykh kul'tur tresta Goszelenkhoz Ministerstva kommunal'nogo khozyaystva RSFSR (for Vekhov); 14. Bryanskiy lesokhozyaystvennyy institut (for Grozdov); 15. Botanicheskiy sad pri Voronezhskom gosudarstvennom universitete (for Mashkin); 16. Orekhovo-Zuyevskiy pedagogicheskiy institut (for Bosse); 17. Botanicheskiy sad pri Rostovskom gosudarstvennom universitete imeni V.M. Molotova (for Matukhin); 18. Botanicheskiy sad Kuybyshevskogo gorodckogo otdela narodnogo obrazovaniya (for Zatvarnitskiy); 19. Zoobotanicheskiy sad pri Kazanskom universitete (for Grachev); 20. Gosudarstvennyy respublikanskiy proektnyy institut "Giprokommunstroy" (for Cherkasov); 21. Botanicheskiy sad Odesskogo gosudarstvennogo universiteta imeni I.I. Mechnikova (for Kirkopulo); 22. Botanicheskiy sad pri Dnepropetrovskom gosudarstvennom universitete (for Levitskaya); 23. Botanicheskiy sad

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NAZAREVSKIY, S.L.---(continued) Card 3.

Akademii nauk USSR (for Grishko, Likhvar', Vil'chinskiy); 24. Kiyevskiy sel'skokhozyaystvennyy institut (for Lypa); 25. Botanicheskiy sad Chernovitskogo gosudarstvennogo universiteta (for Orekhov); 26. Botanicheskiy sad pri L'vovskom gosudarstvennom universitete imeni Iv. Franko (for Shcherbina); 27. Botanicheskiy sad Khar'kovskogo gosudarstvennogo universiteta imeni A.M. Gor'kogo (for TSygankova); 28. Botanicheskiy sad Zhitomirskogo sel'skokhozyaystvennogo instituta (for Baranovskiy); 29. Botanicheskiy sad Akademii nauk Belorusskoy SSR (for Georgiyevskiy); 30. Institut biologii Akademii nauk Belorusskoy SSR (for Stepunin); 31. Botanicheskiy sad Akademii Litovskoy SSR (for Lukaytene); 32. Botanicheskiy sad Latviyskogo gosudarstvennogo universiteta (for Ozolin); 33. Kabardinskiy krayevedcheskiy botanicheskiy sad (for Kos); 34. Sukhumskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Vasil'yev, Rukhadze); 35. Batumskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Shanidze); 36. Tbilisskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Mandzhavidze); 37. Sochinskiy park Dendrariy (for Korkeshko); 38. Gosudarstvennyy Nikitskiy botanicheskiy sad imeni V.M. Molotova (for Sergeyev, Voloshin); 39. Krymskiy filial Akademii nauk SSSR (for Rybin); 40. Botanicheskiy sad Moldavskogo filiala Akademii nauk SSSR (for Ivanova); 41. Botanicheskiy sad Botanicheskogo instituta Akademii nauk Tadzhikskoy SSR (for Ryabova); 42. Botanicheskiy sad Kirgizskogo filiala Akademii nauk SSSR (for Gareyev); 43. Botanicheskiy

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NAZAREVSKIY, S.L.---(continued) Card 4.

sad Akademii nauk Usbekskoy SSR (for Rusanov, Bochantseva); 44. Botanicheskiy sad Akademii nauk Turkmenskoy SSR (for Blinovskiy); 45. Respublikanskiy sad Akademii nauk Kazakhskoy SSR (for Klyshev, Mushegyan).

(Botanical gardens)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S. M.

Sexual differences in plants based on vegetative and biological characteristics. Biul.Glav.bot. sada no.17:42-48 '54. (MLRA 8:3)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR.
(Plants, Sex in)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

Makarov, S N

USSR/Plant Diseases. Diseases of Cultivated Plants. N

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 57, 69564

Author : Makarov, S.N.
Title : Spotty Necrosis and Shrivelled Arms of Grapes.

Orig Pub : Izv. Moldav. fil. AN SSSR, 1956, No 1, 91-113.

Abstract : Spotty necrosis, called "chernilka" in Bulgaria, causes mass shrivelling of sleeves and shafts (shrivelled arms) of grapevines. The disease appears in the shape of dark brown spots on the bast. Spots of dead tissue appear on the vine which comes in contact with the soil in the sheltering ditch, more often in the second half of winter. The main cause of the disease is the frequent change of positive and negative temperatures in the soil where the vine is sheltered. The previous summer's drought, and also other causes, worsen the physiological preparation for wintering and enhance the deterioration. Soil fungi may increase the damage caused by

Card 1/2

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USSR/Plant Diseases. Diseases of Cultivated Plants. N

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 57, 69564

Abstract : frosts. A double protective layer, by straw and soil, lowered the percentage of dry sleeves and shafts. Positive results were also obtained by sprinkling the vines before sheltering by 10% to 20% solution of green vitriol. The relatively resistant species against spotty necrosis in Moldavia, in Rostov Region , re pointed out. Bibl. 24 references.

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

LAPIN, P.I.; KOMAROV, I.A.; LEONOV, A.G.; MAZURKEVICH, F.S.; MAKAROV, [illegible]; MARTEM'YANOV, P.B.; MOSUNOVA, D.I. [deceased]; SAKHAROV, I.M.; SIDNEVA, S.V.; TSITSIN, N.V., akademik, otv.red.; MAKAROV, S.M., red.izd-va; GUSEVA, A.P., tekhn.red.

[Trees and shrubs; results obtained in the Main Botanical Garden of the Academy of Sciences of the U.S.S.R.] Derev'ia i kustarniki; kratkie itogi introduktsii v Glavnom botanicheskom sadu Akademii nauk SSSR. Moskva, Izd-vo Akad.nauk SSSR, 1959. 190 p. (MIRA 12:10)

1. Moscow. Glavnyy botanicheskiy sad.
(Trees) (Shrubs)

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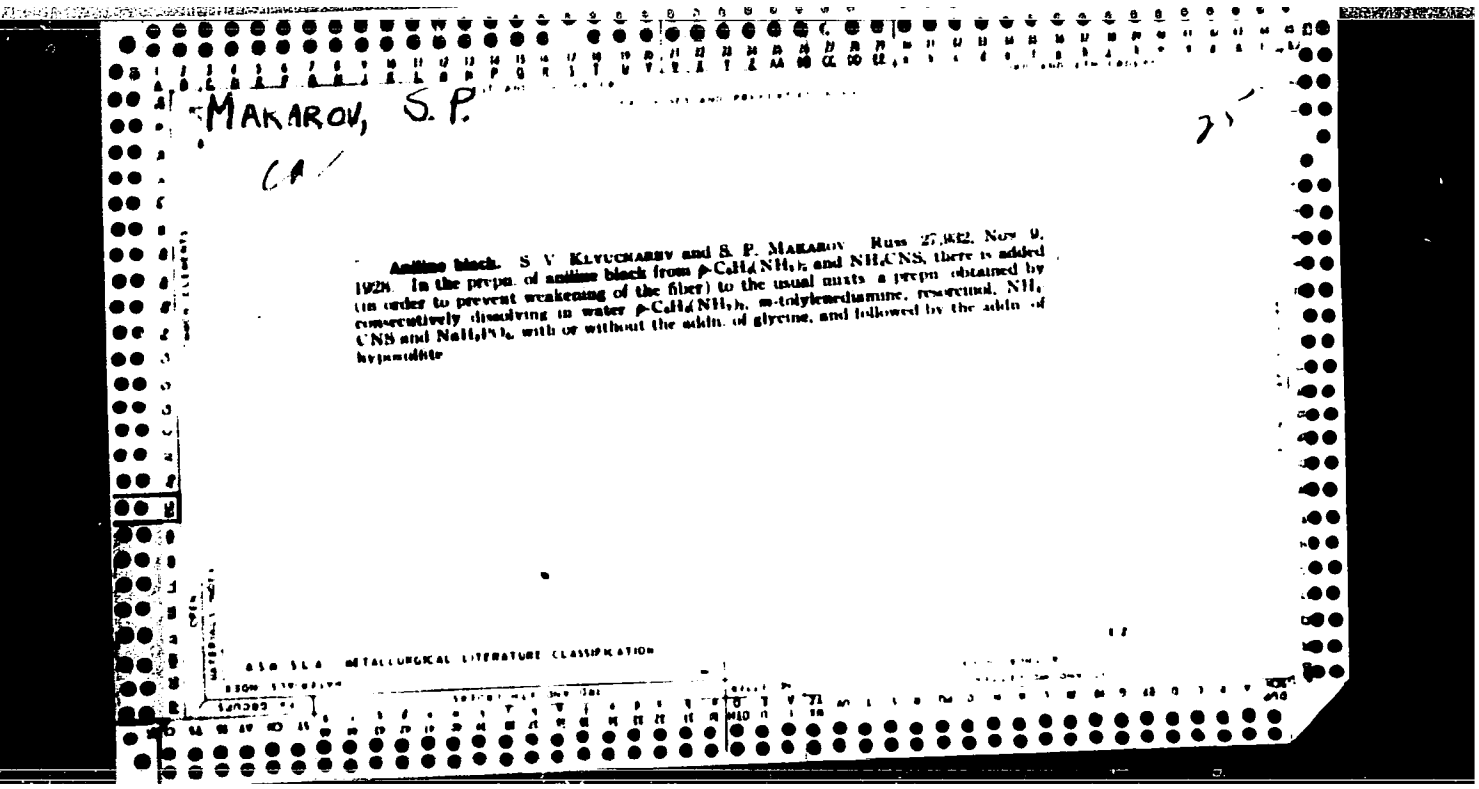

MAKAROV, S. P.

CA

Aniline black. S. V. KLYUCHAREV and S. P. MAKAROV. Rus. 27,882. Nov. 9, 1928. In the prepn. of aniline black from p-$C_6H_4(NH_2)_2$ and NH_4CNS, there is added (in order to prevent weakening of the fiber) to the usual mixts. a prepn. obtained by consecutively dissolving in water p-$C_6H_4(NH_2)_2$, *m*-tolylenediamine, resorcinol, NH_4CNS and NaH_2PO_4, with or without the addn. of glycine, and followed by the addn. of hypochlorite.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

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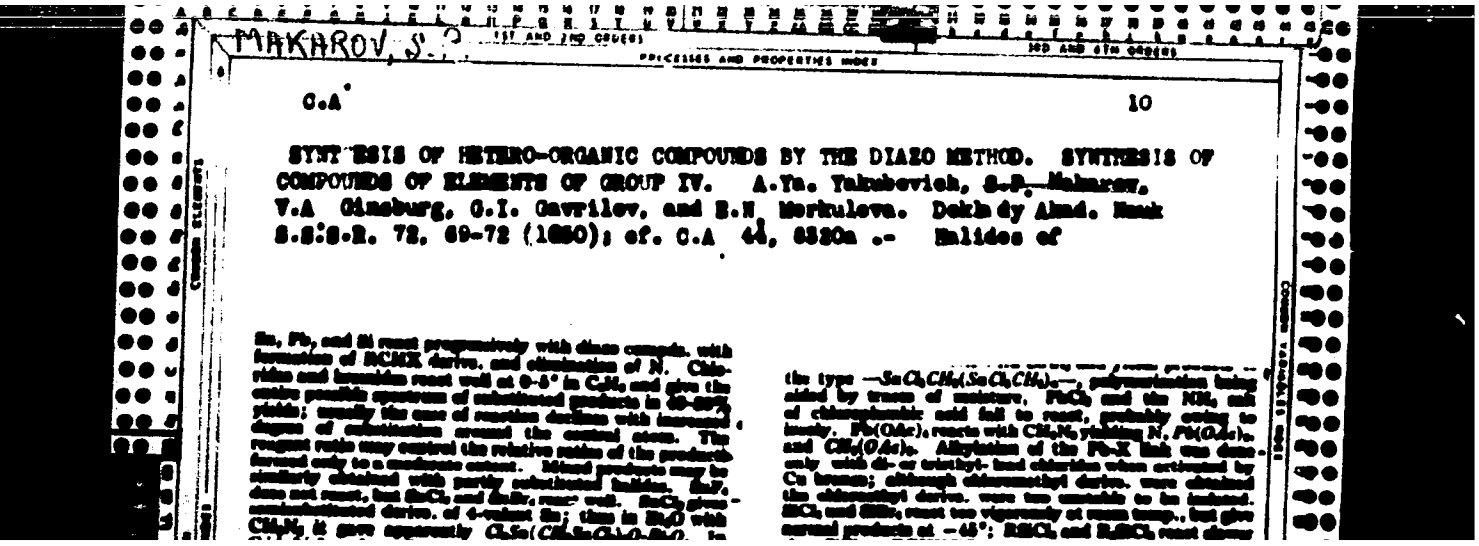

MAKAROV, S. P.

C.A. 10

SYNTHESIS OF HETERO-ORGANIC COMPOUNDS BY THE DIAZO METHOD. SYNTHESIS OF COMPOUNDS OF ELEMENTS OF GROUP IV. A.Ya. Yakubovich, S.P. Makarov, V.A. Ginsburg, G.I. Gavrilov, and E.N. Martsinkovskaya. Doklady Akad. Nauk S.S.S.R. 72, 69-72 (1950); cf. C.A. 44, 6520a.— Halides of

Sn, Pb, and Si react progressively with diazo compds. with formation of RCHX derivs. and elimination of N. Chlorides and bromides react well at 0-5° in C_6H_6 and give the entire possible spectrum of substituted products in 80-90% yields; usually the ease of reaction declines with increased degree of substitution around the central atom. The reagent ratio may control the relative ratios of the products formed only to a moderate extent. Mixed products may be similarly obtained with partly substituted halides. Et_2Sn does not react, but $SnCl_4$ and $EtSnCl_3$ react well. $SnCl_4$ gives semisubstituted derivs. of 4-valent Sn; thus in Et_2O with CH_2N_2 it gave apparently $Cl_3Sn(CH_2CH_2Cl)_2O \cdot Et_2O$. In the type $—SnCl_2CH_2(SnCl_2CH_2)_n—$, polymerization being aided by traces of moisture. $PbCl_2$ and the NH_4 salt of chloroplumbic acid fail to react, probably owing to insolv. $Pb(OAr)_2$ reacts with CH_2N_2 yielding N. $Pb(OAr)_2$, and $CH_2(OAr)_2$. Alkylation of the Pb-X link was done only with di- or trihalo- bond distortion when activated by Cl or bromo; although chloromethyl derivs. were obtained the chloroethyl derivs. were too unstable to be isolated. $HgCl_2$ and $HgBr_2$ react too vigorously at room temp., but give normal products at −45°; $RHgCl$ and R_2HgCl_2 react slowly

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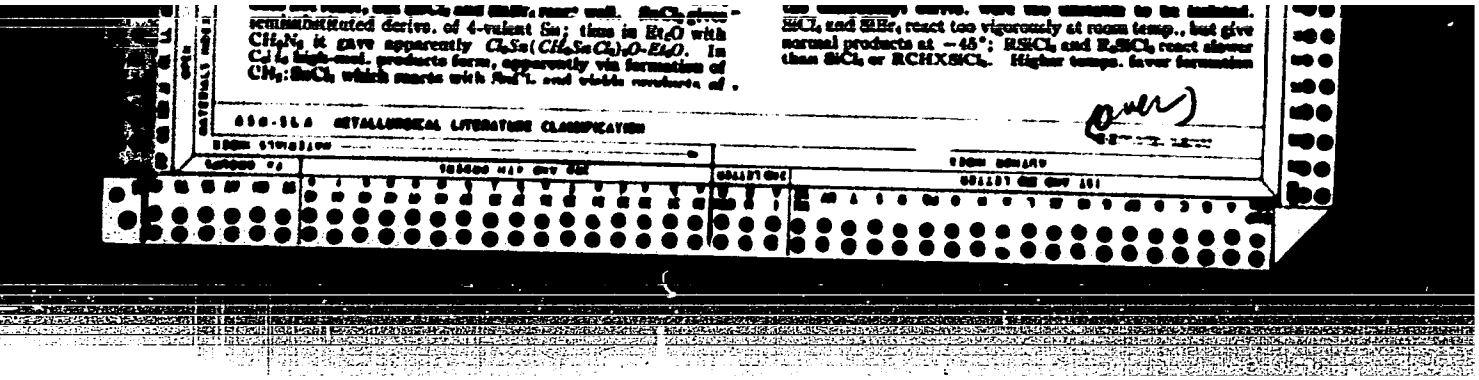

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USSR/Chemistry - Organometallic Compounds Sep 52

"Synthesis of Organo-Elemental Compounds of the Aliphatic Series by the Diazo Method. I. Synthesis of Compounds of Group V Elements - Antimony, Arsenic, and Bismuth-Organic Compounds," A. Ya. Yakubovich, S. P. Makarov

"Zhur Obshch Khim" Vol 22, No 9, pp 1528-1534

The diazo method was successfully used for the synthesis of antimony, arsenic, and bismuth-org compds. From antimony trichloride and [illegible] tri-(chloromethyl)-stibene was obtained, while from diazoethane, di-(alphachloroethyl)-chlorostibene was obtained. Antimony pentachloride added in a molar ratio to diazomethane reacts under formation of antimony trichloride. In the reaction of arsenic trichloride with diazoethane, di-(alpha-chloroethyl)-chloroarsine or tri-(alpha-chloroethyl)-arsine may be obtained depending on the ratio of reagents. The latter is an unstable compd which normally decomposes on standing. Bismuth trichloride reacts with diazomethane to form an unstable oxide of chloromethylbismuth, which after treatment with HCl, yields unstable chloromethyldichlorobismuth.

MAKAROV, S. P.

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MAKAROV, S.P.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

(3)

Synthesis of heteroorganic compounds of the aliphatic series by the diazo method. I. Synthesis of compounds of elements of group V: antimony, arsenic, and bismuth organic compounds. A. Ya. Yakubovich and S. P. Makarov. *J. Gen. Chem.* (U.S.S.R.) 22, 1569-74(1952)(Engl. translation).—See *C.A.* 47, 8010e. II. Synthesis of compounds of group V elements—organophosphorus compounds. A. Ya. Yakubovich and V. A. Ginsburg. *Ibid.* 1575-82.—See *C.A.* 47, 9254g. III. Synthesis of compounds of elements of group IV. Organosilicon compounds. A. Ya. Yakubovich and V. A. Ginsburg. *Ibid.* 1831-5.—See *C.A.* 47, 9256e. IV. Synthesis of compounds of elements of group IV. Organotin compounds. A. Ya. Yakubovich, S. P. Makarov, and G. I. Gavrilov. *Ibid.* 1827-32.—See *C.A.* 47, 9257b.

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MAKAROV, S.P.

YAKUBOVICH, A.Ya.; MAKAROV, S.P.; GAVRILOV, G.I.

Synthesis of heteroörganic compounds of the aliphatic series by the diazo method. IV. Synthesis of compounds of elements of group IV. Organotin compounds. Zhur. Obshchey Khim. 22, 1788-93 '52. (MLRA 5:11)
(CA 47 no.18:9257 '53)

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MAKAROV, S. P.

6

@chem

Synthesis of heteroorganic compounds of the aliphatic series by the di-) method. V. Synthesis of compounds of elements of Group IV—organosilicon compounds. [illegible] (with [illegible]), [illegible] (with [illegible]), and [illegible] (with [illegible]), *J. Gen. Chem. U.S.S.R.* [illegible] (Engl. translation).—See *C.A.* 47, 9867b. H. L. H.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

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MAKAROV, S. P. Lt. Col. of Med. Services

"The Significance of the Vestibulometric Test for Determination of Vestibular Disturbances of the Flying Personnel," Voyenno-medits. zhur., No.2, pp 51-56, 1955

Describes the author's experience with trying out N. N. Lozanov's method of vestibulometric examination.

Verbatim translation - D 311971, 16 Aug 55

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AUTHORS: Yakubovich A. A. Makarov S. P. Gerasimova T. A.

TITLE: A Production Method for Fluorine Derivatives of the Organometal Compounds of Silicon, Tin and Sulfur (Metody polucheniya ftorproizvodnykh kremniya [illegible] i sery)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. [illegible] (USSR)

ABSTRACT: In the series of the element organic compounds very often alkoxy groups which are bound to the concerned element, are by action of acid chlorides exchanged for chlorine. The possibility of the analogous exchange of alkoxy groups for fluorine by reaction with acid fluorides has up to now been investigated yet specially. The authors investigated this reaction at alkoxy compounds of silicon, tin and sulfur. On that occasion it was up that the acid fluorides of carboxylic acids in particular the easily accessible acetyl fluoride, react with the alkoxy compounds of the named elements under formation of the corresponding fluorides:

$$R_mE(OR')_{n-m} + CH_3COF \longrightarrow R_mE(OR')_{n-m-1}F + CH_3COOR'$$

Card 1/4 The described reaction takes place easier if the central atom,

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A Production Method for Fluorine Derivatives [illegible] Organometal Compounds of Silicon, Tin and Sulfur

to which the alkoxy groups are [illegible] as an electropositive element. This alkoxy compounds [illegible] exchange the alkoxy groups [illegible] with the alkoxy fluoride already in the [illegible] of fluorine. The corresponding compounds of silicon and sulfur the exchange takes place at heating up. In all cases the [illegible] By alteration [illegible] case [illegible] number [illegible] ethyldiethoxy [illegible] of tetraethoxy [illegible] easily forms [illegible] The reaction [illegible] investigated [illegible] forms in case [illegible] with a yield [illegible] with benzoyl fluoride was [illegible] Peppard Brown and Johnson (Ref 7), but these authors could not observe any exchange [illegible] Polyfluorosilanes are obtained more easily by Grignard's reaction from silicon tetrafluoride which was observed by

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A Production Method for Fluorine Derivatives of the Organometal Compounds of Silicon, Tin and Sulfur

the authors already before in the synthesis of ethylsilane fluorides (Ref 3):

$$SiF_4 \xrightarrow{RMgX} RSiF_3 \xrightarrow{RMgX} R_2SiF_2$$

The reaction of acetyl fluoride with alkoxy compounds of sulfur was investigated at the example of dimethyl sulfate. On that occasion formed the methyl ester of the fluorsulfonic acid with a yield of 60 % at conduction of acetylfluoride vapor into boiling dimethyl sulfate. From the experimental results comes out that the reaction of the carboxylic acid fluorides with alkoxy compounds of various elements is a commonly appliable important method for the synthesis of the concerned fluorine compounds. As the initial products - alkoxy compounds of the concerned elements and carboxylic acid fluorides - in general are easily accessible compounds, the described method earns general preparative interest. In an experimental part exactly are described the synthesis and the properties of diethylethoxy tin fluoride diethyl tin

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79-28-4 40/60

A Production Method for Fluorine Derivatives of the Organometal Compounds of Silicon, Tin and Sulfur

fluoride tin tetrafluoride tributoxyfluorsilane diethyl-difluorsilane ethyltrifluorsilane and of the methyl ester of the fluorsulfonic acid. There are 3 references, 1 of which is Soviet.

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AUTHORS: Yakubovich, A. Ya., Makarov, S. P.

TITLE: Synthesis of Vinyl Monomers VII. β-(Vinylethynyl)-Ethanol and γ-Hydroxybutyronitrile

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 605-607 (USSR)

ABSTRACT: The reaction between vinylacetylene and ethylene oxide in liquid ammonia yielded β-(vinylethynyl)-ethanol (b.p. 63-64° C at 8 mm, n_D^{20} = 1.4932) which on hydrogenation was converted to n-hexanol. A similar condenstion of sodium salt of acetonitrile with ethylene oxide in liquid ammonia yielded γ-hydroxy-butyronitrile (b.p. 238-240° C). Evidently the reactions are general and can be used to obtain en-yn-ols and γ-hydroxynitriles. There are 4 references, 1 Belgian, 2 Soviet, and 1 German.

SUBMITTED: December 29, 1958 Card 1/1

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B001/B066

11.2130

AUTHORS: Englin, M. A., Makarov, S. P., Dubov, S. S., Krasnousov, L. A., and Yakubovich, A. Ya.

TITLE: Fluorination of the Complex of Acetonitrile with Boron Trifluoride

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2371-2374

TEXT: On the basis of Refs. 1-5, the above reaction was carried out with dilute fluorine in a copper reaction vessel at room temperature. NF_3, CH_3CF_3, CHF_2CN, and two new products were separated by distillation (one of them boiled at -25-24.5°C, the other at -4.8-4.7°C) in addition to a considerable quantity of unchanged acetonitrile. The first product, a colorless gas, is completely decomposed by alcoholic alkali lye, does not separate any iodine from alcoholic potassium iodide solution, is easily soluble in organic solvents and difficultly in water. Its elementary composition and molecular weight correspond to the formula $C_2H_2NF_3$. Its structure, which is probably due to the fluorination of acetonitrile, can be possibly represented by

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Fluorination of the Complex of Acetonitrile With Boron Trifluoride

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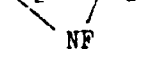
the isomeric formulas (I), (II), (III):

$CH_2=CFNF_2$, $CH_2FCF=NF$, 

(I) (II) (III).

To confirm the structure of this product its infrared spectrum was examined. There is a band characteristic of the C-H bond One band group is caused by vibrations of the C-F bond. An intense band may be assigned to stretching vibrations of the N-F bond. These results and further spectroscopic data (Ref. 6) indicated that the structures (I) and (II) of the product $C_2H_2NF_3$ are not confirmed spectroscopically, which fact speaks in favor of formula (III). This assumption is also supported by the presence of two bands in the infrared, which may be regarded as deformation vibrations of a three-membered ring. The structure of the products discussed may be that of fluorinated ethylene imine. The second product with the molecular weight 117 does not decolorize the aqueous-alkaline $KMnO_4$ solution. Its molecular weight and elementary composition correspond to the formula $C_2H_3NF_4$. In its infrared spectrum there are absorption bands which may be assigned to the N-F and C-H bonds, and a band group appears which is due to C-F vibrations. All these properties indicate

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Fluorination of the Complex of Acetonitrile With Boron Trifluoride

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that the structure suggested for the product is that of α,α,N,N-tetrafluoro ethyl amine. On fluorination of the complex $CH_3CN \cdot BF_3$ with elementary fluorine, 36% of acetonitrile remains unchanged. The yields of the fluorination products referred to the initial acetonitrile are the following: for NF_3 - 6.5%, CH_3CF_3 - 5%, CH_2CF_2NF - 3%, $CH_3CF_2NF_2NF_2$ - 2.5%, CHF_2CN - 1%. There are 12 references: 1 Soviet, 7 US, 3 British, 3 German, 1 French, and 1 Belgian.

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S/079/60/030/007/036/039/XX
B001/B066

AUTHORS: Yakubovich, A. Ya., Englin, M. A., and Makarov, S. P.

TITLE: Fluorination of Silver and Potassium Cyanates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2374-2377

TEXT: The authors describe the heterogeneous fluorination of silver and potassium cyanates. The initial cyanate was mixed with calcium fluoride and treated with elementary fluorine diluted with nitrogen at 25-55°C. The fluorination of silver cyanate gives carbonyl fluoride COF_2 (72%) and carbonic acid (24.5%). No nitrogen-containing products were detected, which may be due to the conversion of cyano-nitride to elementary nitrogen; it was difficult to confirm the presence of the latter because of the considerable dilution of the initial fluorine with nitrogen. Silver cyanate is quantitatively converted to silver difluoride. On fluorination of potassium cyanate, trifluoro methyl-hypofluorite, CF_3OF (80%), and nitrogen trifluoride, NF_3 (60%), were separated in addition to potassium fluoride and small quantities of carbonic acid and carbonyl fluoride. The expected

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hypofluorite FOCN could not be detected in the fluorination products, which may be explained by a further fluorination on the C≡N bonds according to the formula

$$MeOC{\equiv}N \xrightarrow{F_2} \left[FOC{\equiv}N\right] \xrightarrow{F_2} \left[FOCF_2NF_2\right] \xrightarrow{F_2} FOCF_3 + NF_3$$

. This formula is in accordance with the fluorination of potassium cyanate, but not with that of silver cyanate. Thus, another formula had to be found for the fluorination of the cyanates. The authors have previously found that in the heterogeneous fluorination of the complex $(CH_3CN \cdot BF_3)$ fluorine adds chiefly to the C≡N bond to form $CH_3CF_2NF_2$ (Ref. 9). Therefore, the above fluorination takes place presumably according to the formula

$$MeOC{\equiv}N \xrightarrow{F_2} \left[MeOCF_2NF_2\right] \xrightarrow{F_2} \left[MeOCF_3\right] + \left[NF_2\right]$$

. As a result of further conversion of the trifluoro-methylate of the metal, which is formed as an intermediate, carbonyl fluoride or trifluoro methyl-hypofluorite may be formed. There are 12 references: 2 Soviet, 12 US, and 3 German.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

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B001/B067 B2B0

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AUTHORS: Ginsburg, V. A., Prisazhenova, N. F., Rodionova, E. F., Dubov, S. S., Makarov, S. P., Yakubovich, A. Ya.

TITLE: Reduction of Nitrogen Oxides With Polyfluorinated Ethylenes. I. Synthesis and Reduction of Polyfluorinated Nitroso Compounds

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2406 - 2409

TEXT: In continuation of the papers (Refs. 1-7) on the reactions of nitrosyl halides with halogenated olefins the authors studied the reaction of N_2O_3 with polyfluorinated ethylenes where nitroso compounds might have been expected as in the case with non-fluorinated unsaturated compounds. In the reaction of N_2O_3 in the gaseous state with tetrafluoro ethylene at room temperature a liquid of deep-blue color, 2-nitro-1,1,2,2-tetrafluoro-nitroso-ethane, is readily formed (Refs. 6,7). Besides this main product (yield more than 60%) a dimitro derivative of tetrafluoro

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(2)

ethylene and a small amount of non-identified high-boiling products is formed. In the same way a chlorine-containing nitro-nitroso compound is formed from N_2O_3 and trifluoro-chloro ethylene. The nitroso compounds synthesized by the authors and some other scientists (Refs. 3,6,9), as well as other polyfluorinated nitroso compounds, are rather stable, and form no dimers. In the infrared spectrum the nitroso compounds obtained from tetrafluoro ethylene show characteristic frequencies of the valence vibrations of the bonds N - O and C — N at 6.2 μ and 12.25 μ which practically agree with the frequencies observed in analogous compounds by J. Hasek (Ref. 10). The same nitroso compounds are formed in the reaction of NO with tetrafluoro- or trifluoro-chloro ethylene on irradiation with ultraviolet light. The reduction of the nitro-nitroso compounds with hydriodic acid in ether medium yields the acid fluoride of nitro-difluoro-acetohydroxamic acid which was separated as ethereate ($HO_2CF_2CFClNO$). The structure of the nitro-nitroso compound which was obtained from N_2O_3 and trifluoro-chloro ethylene above that in the

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reaction the addition of N_2O_3 takes place in such a way that the nitroso group is linked with the carbon atom which has a higher electron density. There are 17 references: 4 Soviet and 4 German.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

S/079/60/030/007/019/020
B001/B067 82301

AUTHORS: Ginsburg, V. A., Prisyazhnaya, N. F., Shpanskiy, L. A., Andronova, N. F., Dubov, S. S., Khokhlova, A. I., Makarov, S. P., Yakubovich, A. Ya.

TITLE: Reaction of Halogens, Nitrogen Oxide, and Polyfluorinated Ethylenes in Ultraviolet Light. Synthesis and Thermal Decomposition of Polyfluorinated Aliphatic Nitroso Compounds

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2409 - 2415

TEXT: In continuation of their earlier paper (Ref. 1) the authors studied the reaction of polyfluorinated ethylenes with NO and halogen in ultraviolet light. They assumed that atomic chlorine or bromine would also lead to the formation of β-halogen nitroso compounds. In fact, the authors of the present paper showed that in the reaction of nitrosyl chloride with symmetrical difluoro-dichloro ethylene, 1,2-difluoro-1,1,2-trichloro-nitroso ethane results in good yields. This compound

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proved sufficiently stable and could be isolated (compound 6 in the table). The experiments showed, as had been theoretically expected, that in all cases the corresponding nitroso alkanes were obtained in sufficient yields on irradiation of the gas mixtures NO + Cl_2 or NO + Br_2 with polyfluorinated ethylenes (such as tetrafluoro-, trifluoro-chloro-, or trifluoro ethylene at the ratio olefin : NO : Hal_2 = 1 : 1 : 1/2) (Table). These compounds have an intensive blue color, and are stable liquids. Besides them also the corresponding alkylene dihalides as well as β-nitrogen halide compounds are always separated from the reaction mass. Probably they are products of a partial oxidation of the nitroso ethylene by means of hydrogen iodide the corresponding fluorides of the chloro-difluoro- and bromo-difluoro-acetohydroxamic acids are formed which indicates the addition of the halogen to the CF_2 group of the olefin in the reaction between NO, Hal_2, and olefin. The pyrolysis of

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the $ClCF_2CF_2NO$ and $HO_2CF_2CF_2NO$ nitroso compounds at 120-130° yields the polyfluorinated ethylenimines $ClCF_2CF_2 - CFCF_2Cl$ and $HO_2CF_2CF_2 - CFCF_2NO_2$, respectively. There are 1 table and 8 references: 3 U.S., and 2 German.

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GINSBURG, V.A.; ZELENIN, G.Ye.; DUBOV, S.S.; MAKAROV, S.P.; YAKUBOVICH, A.Ya.

Synthesis of esters of thioazocarboxylic acids. Zhur.ob.khim. 30 no.8:2689-2692 Ag '60. (MIRA 13:8)
(Azo compounds) (Acids)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

DUBOV, S.S.; GINSBURG, V.A.; KADINA, M.A.; RODIONOVA, N.P.; RODKIN, S.A.; MAKAROV, S.P.; FILATOV, A.S.; YAKUBOVICH, A.Ya.

Appearance of the azo group in vibration and electron spectra. Zhur.VKHO 6 no.5:596-597 '61. (MIRA 14:10)
(Azo compounds—Spectra)

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YAKUBOVICH, A.Ya.; GINSBURG, V.A.; MAKAROV, S.P.

Preparation of fluorine derivatives of phosphorus. Zhur.ob.khim. 31 no.5:1517-1518 My '61. (MIRA 14:5)
(Phosphinic acid) (Fluorine compounds)

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YAKUBOVICH, A.Ya.; GINSBURG, V.A.; MAKAROV, S.P.; SHPANSKIY, V.A.; PRIVEZENTSEVA, N.F.; MARTYNOVA, L.L.; KIR'YAN, B.V.; LEMKE, A.L.

Oxidation, reduction, and disproportionation of polyfluonitrosoalkanes. Dokl. AN SSSR 140 no.6:1352-1355 O '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Paraffins) (Nitroso compounds) (Oxidation-reduction reaction)

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YAKUBOVICH, A.Ya.; MAKHONOV, S.P.; [illegible]SBURG, V.A.; PRIVEZENTSEVA, M.F.; MARTYNOVA, L.I.

Pyrolysis and photolysis of polyfluoronitrosoalkanes, a reaction of nitroso compounds with nitrogen oxide. Dokl. AN SSSR 141 no.1:125-128 N '61. (MIRA 14:11)

1. Predstavleno akademikom I.L.Knunyantsem i V.I. Kabachnikom.
(Nitroso compounds)
(Nitrogen oxide)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; GINSBURG, V.A.; FILATOV, A.S.; ENOLIN, M.A.; PRIVEZENTSEVA, N.F.; PRIVEZENTSEVA, N.F.; NIKIFOROVA, T.Ya.

Reactions of polyfuorinated nitrosoalkanes with amines. Dokl. AN SSSR 141 no.2:357-360 N '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Nitroso compounds) (Amines)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

GINSBURG, V.A.; YAKUBOVICH, A.Ya.; FILATOV, A.S.; SHPANSKIY, V.A.; VLASOVA, Ye.S.; ZELENIN, G.Ye.; SERGIYENKO, L.F.; MARTYNOVA, L.L.; MAKAROV, S.P.

Production, pyrolysis, and photolysis of polyfluorinated azo compounds of the aliphatic series. Dokl. AN SSSR 142 no.1:88-91 Ja '62. (MIRA 14:12)

1. Predstavleno akademikami I.L. Knunyantsom i M.I. Kabachnikom.
(Azo compounds) (Fluorination)

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S 3610 2209

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AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S., Zelenin, G. Ye., Makarov, S. P., Shpanskiy, V. A., Kotel'nikova, G. P., Sergiyenko, L. F., and Martynova, L. L.

TITLE: Heterolytic transformations of polyfluorinated azoalkanes

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 2, 1962, 354-357

TEXT: A number of heterolytic transformations of polyfluorinated azoalkanes was discovered for the first time. The said azoalkanes, while being highly resistant to oxidizing agents, easily react with reducers (HI, H_2S, H_3P) in polar media (ether, methanol) at low temperatures, whereby the azo group is converted into the hydrazo group. Hexafluoro hydrazomethane presents acid properties and is relatively stable in the solvate form in ether or acetone. The etherate reacts with ketene, and the normal diacyl derivative is formed as a result. Hydrogen fluoride is readily separated from hexafluoro hydrazomethane under the action of bases:

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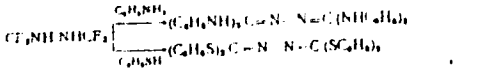
Heterolytic transformations of...



Hexafluoro hydrazomethane reacts with aluminum chloride to form the dimer of tetrafluoro formazine, and, if oxidized in anhydrous media ($KMnO_4$ + CH_3COOH), it passes over to the intensively yellow cis-form of hexafluorazo methane, which readily takes the almost colorless trans-form under the action of light, alkali lyes, or metals. In the reduction of azoalkanes which contain the groups CF_2Cl or R_fCF_2, the corresponding hydrazo compounds cannot be isolated, due to hydrolysis. The compound $CF_3NHNHC_6H_5$ can be distilled in vacuo (b.p.56°C/1 mm Hg), and passes over to indazole under the action of hydrogen iodide. Under the action of strong acids, the azo group of polyfluorazo alkanes is able to add one proton which, in the case of asymmetric azoalkanes, is added to the nitrogen atom adjoining the more electronegative substituent. These reactions take place most readily in anhydrous hydrofluoric acid, whereby polyfluorazo alkanes are dimerized into benzidine derivatives. Poly-

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Heterolytic transformations of...

fluorinated azo compounds are particularly sensitive to nucleophilic reagents. The reaction rate with amines grows with the amine basicity, and the reactivity in azo compounds of the type $CF_3H{-}NR$ drops in the sequence $R{-}CF_3 > CF_2H > CH_3$. With secondary amines, mercaptans, and sulfinic acids, the azo compounds react as follows:

$$CF_3N{=}NCF_3 \left\{ \begin{array}{l} \xrightarrow{HNR_2} [CF_3NHN(CF_3)NR_2] \xrightarrow{HNR_2} (R_2N)_2C{=}N{-}N(CF_3)NR_2 \\ \xrightarrow{HSR} [CF_3NHN(CF_3)SR] \xrightarrow{HSR} CF_3NHNHCF_3 + RSSR \\ \xrightarrow[C_6H_5SO_2H]{} [CF_3NHN(CF_3)SO_2C_6H_5] \rightarrow CF_3{-}NN(CF_3)SO_2C_6H_5 \end{array} \right. \quad (A)$$

These conversions probably begin with the formation of a transition complex of the type of a π-complex, e. g., $CF_3H{-}NCF_3$ (with HNR_2 above the N). This assumption is backed by the fact that the transition complex, in the reaction of hexafluorazo methane with trialkyl phosphites, can be isolated under mild

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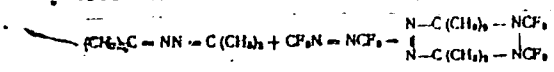
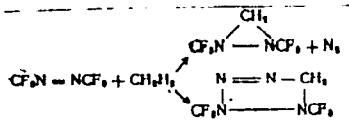
Heterolytic transformations of...

conditions (cooling with dry ice). On heating, the adduct decomposes to nitrogen, tetrafluoro ethylene, diethyl ether, ethyl fluoride, diethyl fluoro phosphite, and diethyl ethano phosphinate. In analogy to azodicarboxylic acid esters, hexafluorazo methane with dienes readily yields the Diels-Alder addition, reacts with azines according to the scheme



and with diazomethane as follows:



Hexafluorazo methane reacts smoothly with organo-magnesium compounds at low temperatures and forms the hither unknown acid fluorides of

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328,9
S/020/62/142/002/020/029
B106/B101

Heterolytic transformations of...

polyfluoro alkyl-(aryl)-hydrazine carboxylic acids $CF_3N(R)NHCOF$, from which a number of further derivatives was obtained:

$$CF_3N(R)NHCOF \xrightarrow{NH_3} CF_3N(R)NHCONH_2$$
$$\xrightarrow{C_6H_5NH_2} CF_3N(R)NHCONHC_6H_5$$
$$\xrightarrow{NaOCH_3} CF_3N(R)NHCO_2CH_3$$
$$\xrightarrow{HCl,H_2O} RNHNH_2 + 2CO_2 + 4HF$$

There are 1 table and 3 references: 2 Soviet and 1 non-Soviet.

PRESENTED: June 1, 1961, by I. L. Knunyants, Academician, and M. I. Kabachnik, Academician

SUBMITTED: June 1, 1961

Table 1. Compounds synthesized for the first time.
Legend: (a) compound; (b) boiling point; (c) melting point; (d) does not melt below 300°C.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

11, 1135
5.2420
11.2131

3h750
S/020/62/142/003/017/027
B106/B110

AUTHORS: Makarov, S. P., Shpanskiy, V. A., Ginsburg, V. A., Shchekotikhin, A. I., Filatov, A. S., Martynova, L. L., Pavlovskaya, I. V., Golovaneva, A. F., and Yakubovich, A. Ya.

TITLE: Reactions of polyfluorinated nitroso-alkanes with unsaturated compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 596 - 599

TEXT: Trifluoronitroso methane is used as an example of some reactions of polyfluorinated nitroso-alkanes with unsaturated compounds. These addition reactions take place easily (in an autoclave at -70 to 0°C). Monomers and polymers containing 1 mole of nitroso compound per olefin mole form. Styrene and trifluoronitroso methane also form a compound with the molar ratio 1 : 2 which decomposes into 1 mole of nitroso compound, formaldehyde, and the corresponding imine when heated to 70 - 80°C. Therefore it has the structure $C_6H_5CH(CF_3)-N(O)-O-N-CF_3$. Trifluoronitroso methane adds to diphenyl

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Reactions of polyfluorinated

ketene even more easily under the formation of $(C_6H_5)_2C(O\text{-}NCF_3)\text{-}CO$ which decomposes when heated to 300°C mainly forming trifluoromethyl isocyanate (Bp. 33°C, yield 35%) and traces of trifluoronitroso methane. The latter also reacts with $R_FC{\equiv}CX$ alkines (X = Cl, Br; R_F = CF_3, CF_2Cl, $CFCl_2$) at room temperature in an autoclave. $ROOCN(O\text{-}NCF_3)\text{-}NCOOR$ forms on heating trifluoro-nitroso methane with azodicarbonic acid esters to 100 - 150°C under pressure. Diazomethane and trifluoronitroso methane react at -70°C to give a polymeric nitron $[CF_3N(O)CH_2]_n$ under nitrogen separation. Phosphazines and trifluoronitroso methane react violently at -70°C following the scheme $(C_6H_5)_3P{=}N\text{-}N{=}CH_2 + CF_3NO \rightarrow CH_2O + [(C_6H_5)_3P{=}N\text{-}N{=}NCF_3] \xrightarrow{-N_2} (C_6H_5)_3P{=}NCF_3$. The product of this reaction also forms from triphenyl phosphine and trifluoromethyl azide under the same conditions. Trifluoronitroso methane and methyl isocyanide react

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

vigorously when heated to 25°C in an autoclave to form $CH_3N{=}C(O{-}NCF_3){-}C{=}NCH_3$ which decomposes into trifluorinated dimethyl carbodiimide and methyl isocyanate when heated to 350 - 400°C in vacuo. These reactions demonstrate the great tendency of the N=O groups of trifluoronitroso methane to addition reactions with nucleophilic and electrophilic compounds. For comparison, some additions similar to the above reactions were conducted with polyfluorinated azomethines: $CF_3N{=}CF_2$ (Bp. -33°C) and $CF_3N{=}CFCl$ (Bp. -5°C). In all cases, the additivity of the C=N groups of these compounds was much lower. On reaction of $CF_3N{=}CF_2$ with diphenyl ketene (autoclaved for 12 hrs at 180°C), not addition, but dimerization of the initial substance took place. The dimer also formed in almost quantitative yields by reaction between $CF_3N{=}CF_2$ and pyridine at -70 - 50°C. With aniline, the dimer converts into the anilide of the monomer, when subjected to pyrolysis (> 500°C) it dissociates into the monomer ($CF_3N{=}CF_2$). Unlike the polyfluorinated azomethines above, difluoro formimine easily

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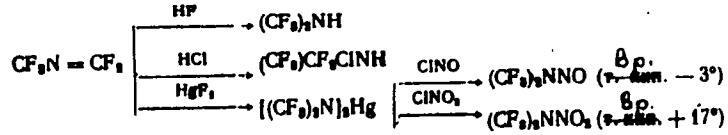
reacts with diphenyl ketene to form the adduct $(C_6H_5)_2CCO \cdot 2CF_2NH$.

Addition reactions with hydrogen fluoride, hydrogen chloride, and mercuric fluoride following the schemes



are very characteristic for the polyfluorinated azomethines in question. The tendency of polyfluorinated substances with double bonds to addition reactions with olefins therefore decreases as follows: N=O > N=N > N=C. Table 1 shows the physical constants of the compounds synthesized for the first time. There are 1 table and 12 references: 4 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: E. E. Griffin, R. N. Haszeldine, Proc. Chem. Soc., 1959, 369; 1960, 1151 - 1155; C. E. Griffin, R. N. Haszeldine, J. Chem. Soc., 1960, 1398; J. Crawford, J. Polym. Sci., 45, No. 145, 261 (1960).

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

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B106/B110

PRESENTED: June 1, 1961, by M. I. Kabachnik, Academician

SUBMITTED: May 30, 1961

Table 1. Compounds synthesized for the first time.

Legend: (a) Compound; (b) Bp. (Fp.), °C/mm; (c) determined, %; (d) calculated, %; (e) Fp. * Non-distillable yellow oil; ** molecular weight (in acetic acid) : determined 580, calculated for the pentamer 565.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

GINSBURG, V.A.; VLASOVA, Ye.S.; VASIL'YEVA, M.N.; MIRZABEKOVA, N.S.; MAKAROV, S.P.; SHCHEKOTIKHIN, A.I.; YAKUBOVICH, A.Ya.

Photoreaction of hexafluoroazomethane with unsaturated compounds. Dokl.AN SSSR 149 no.1:97-99 Mr '63. (MIRA 16:2)

1. Predstavleno akademikom M.I.Kabachnikom.
(Azomethane) (Photochemistry) (Unsaturated compounds)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MARTYNOV, I.V.; KRUGLYAK, Yu.L.; MAKAROV, S.P.

Halo-α-nitrocarboxylic acids. Part 1: Derivatives of chloronitroacetic acid. Zhur.ob.khim. 33 no.10:3382-3384 O '63.

Halo-α-nitrocarboxylic acids. Part 2: Derivatives of fluorochloronitroacetic acid. 3384-3386

Halo-α-nitrocarboxylic acids. Part 3: Derivatives of α-nitroperfluorocarboxylic acids. 3386-3388 (MIRA 16:11)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MARTYNOV, I.V.; KRUGLYAK, Yu.L.; MAKAROV, S.P.; TKACHEV, V.G.

Halo-α-nitrocarboxylic acids. Part 4: Derivatives of fluoro-chloro-α-nitroproprionic acids. Zhur.ob.khim. 33 no.10: 3388-3391 O '63. (MIRA 16:11)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

[redacted] 3

L 23256-66 EWT(m) DIAAP

ACC NR: AP6009155 SOURCE CODE: UR/0367/65/002/005/0956/0957

AUTHOR: Zhelev, Zh. T.; Kalinnikov, V. G.; Kudryavtseva, A. V.; Lebedev, N. A.; Makarova, S. P.; Muziol[1], G.; Kherrmann, E.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: New isotopes Er^{157}, Ho^{157}, and Er^{156}

30
B

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 956-957

TOPIC TAGS: erbium, holmium, isotope, half life

ABSTRACT: The search for new erbium and holmium isotopes was made with the aid of a magnetic β spectrometer with three successive foci and with a scintillation γ spectrometer. The compounds for the investigation were separated chromatographically from a tantalum target bombarded with 660-Mev protons in the OIYaI synchrocyclotron. The chemical separation of the rare earths started approximately ten minutes after the end of the irradiation, and that of the erbium and holmium fractions after two hours. The genealogical connections were investigated in the following proposed chains of decay reaction:

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L 23256-66

ACC NR: AP6009155

$$Er^{157} \xrightarrow{?} Ho^{157} \xrightarrow{?} Dy^{157} \xrightarrow{8.2\ hr} Tb^{157},$$

$$Er^{156} \xrightarrow{?} Ho^{156} \xrightarrow{57\ min} Dy^{156}\ (stable).$$

The half lives of Er^{157} and Ho^{157} were found to be 24^{+2}_{-4} and 18^{+2}_{-4} minutes, respectively. While the existence of Er^{157} and Ho^{157} was previously predicted in the literature, no data on the existence of Er^{156} have ever been published. The half life of Er^{156} could not be reliably identified, but an upper limit of 10--12 minutes was estimated for it. It is pointed out in the conclusion that observation of the same isotopes was subsequently reported by A. Gizon et al. (Phys. Nucl. Ann. 1964, Inst. du Rad., Paris, April, 1965) with somewhat different values of the half lives. Orig. art. has: 1 formula.

SUB CODE: 20/ SUBM DATE: 04Jun65/ ORIG REF: 001/ OTH REF: 001

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

MIROSHNICHENKO, I.V.; LARIN, G.M.; MAKAROV, S.P.; VIDEYKO, A.F.

Electron paramagnetic resonance method of studying a free radical of hexafluorodimethyl nitrogen oxide. Zhur.strukt.khim. 6 no.5:776-777 S-O '65. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR. Submitted March 27, 1965.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510009-1

TITLE: Stable free radical of nitrogen hexafluorodimethyloxide, its production, structure and properties

SOURCE: Vsesoyuznoye khimicheskoye obshcheatvo. Zhurnal, v. 10, no. 1, 1965, 106-107

TOPIC TAGS: hexafluorodimethylhydroxylamine, nitrogen hexafluorodimethyloxide, stable free radical, potassium permanganate, acetic acid, electron paramagnetic resonance, hyperfine structure, infrared spectrum, ultraviolet spectrum, spin, paramagnetism, dimer, diamagnetic compound

ABSTRACT: The oxidation of hexafluorodimethylhydroxylamine by potassium permanganate in an acetic acid solution, or by other oxidizing agents (chlorine, fluor-

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ABSTRACT: The oxidation of hexafluorodimethylhydroxylamine by potassium permanganate in an acetic acid solution, or by other oxidizing agents (chlorine, fluorine, etc.) results in the free-radical molecule C_2F_6NO

$$(CF_3)_2NOH \xrightarrow{KMnO_4} (CF_3)_2NO$$

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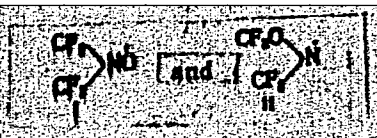
probable



With respect to the EPR spectrum, the value of the g-factor (g = 2.0046) established indicates the spin nature of the paramagnetism in the molecule. The curves of the hyperfine structure, observed for this compound in carbon tetrachloride and fluorinated oil, are given; the HFS spectrum was found to consist of nine equidistant lines with a corresponding intensity ratio. It is noteworthy that, when exposed to UV light, nitrogen hexafluorodimethyloxide is dimerized into a

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